Transportation and Strategic Mobility

Research Areas

Airlift Capacity	Alternative Fueled Vehicles	Costing
Impact of Transition to AEF and AEW	In Transit Visibility	Organic vs. Commercial: Optimal Mix
Material Handling Equipment	Modal Choice	Time Definite Delivery
Total Asset Visibility	Pallet Packing	Transportation Network Design

Recent Research

Analysis of the lease vs. buy decision for general-purpose vehicles
Least cost Aerial Port network
Fly-to-fail compared to replacement at mean time between failures maintenance policies
Tactical vs. Strategic role of the C-17
Cost analysis of flying hour cost of the C-141
Adequacy of commercial railcar inventory to support two near-simultaneous MTW
Use of RF technology at aerial ports for ITV

For further information or to suggest a related thesis topic, please contact:
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Dr. James T. Moore; Maj Stephen M. Swartz Departmental web site: http://en.afit.edu/ens/

Campaign Planning and Execution: Optimizing the J3-J4 Link

Research Areas

Tradeoff analysis of weapon system assignment to missions
Multi-Goal optimization of alternative force packages
Lift constrained force package analysis
Efficient conversion of target set objectives to Master Air Tasking Orders
Impact of Transition to AEF and AEW
Time based asset valuation of alternative force mixes (deployment and sustainment)

Recent Research

Under the Defense Advanced Research Project Agency (DARPA) Advanced Logistics Project (ALP), AFIT has been building a campaign planning model that assists decision makers in selecting goal optimal weapon system mixes (force packages) while simultaneously considering lift and supportability constraints. Major issues studied have involved analysis of both intrinsic (weapon-mission specific) and extrinsic (scenario-environment dependent) issues affecting the value or "utility" of various force packages to a supported commander. The model seeks to maximize value over time (from deployment through sustainment over the course of the campaign) for the force mix given lift and logistics constraints.

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